

WHAT IS CLAIMED IS:

1. An information recording apparatus that irradiates light to an information recording medium, of which recording layer is formed with a phase change layer, so as to record information, comprising:

a light source; and

a dividing mechanism for dividing laser light, which is emitted from said light source and polarized in the same direction, into two light waves, wherein:

said dividing mechanism includes a laser power ratio controller that controls a power ratio at which the laser light is divided;

said two light waves have the first power that causes the temperature of said recording layer to be equal to or higher than the melting point, and the second power that causes the temperature of said recording layer to be equal to or higher than the temperature of atomic bond energy and fall below the melting point, respectively.

2. An information recording apparatus according to Claim 1, wherein the two light waves are irradiated to the same track on said information recording medium, the preceding light is erasing light, and the succeeding light is recording light.

3. An information recording apparatus according to Claim 1, wherein the power of the recording light is higher than the power of the erasing light.

5 4. An information recording apparatus according to Claim 1, wherein: said dividing mechanism is realized with a diffraction grating; the distance between the two light waves is controlled based on the pitch between adjoining ones of grooves constituting said diffraction grating; and the power
10 ratio between the two light waves is controlled based on the width of the grooves constituting said diffraction grating and the pitch between adjoining ones of the grooves.

 5. An information recording apparatus according to Claim
15 1, wherein said dividing mechanism is realized with a liquid crystal diffraction grating, and said laser power ratio controller adjusts voltages to be applied to said liquid crystal diffraction grating so as to control the power ratio.

20 6. An information recording apparatus according to Claim 1, wherein the power ratio is determined based on the information recorded on said information recording medium or a condition of a minimum jitter value detected by performing a recording test.

7. An information recording apparatus according to Claim 5, wherein the power ratio is determined for each of segments of said information recording medium defined with different radial positions on said information recording medium that is a disk.

8. An information recording/reproducing apparatus that irradiates light to an information recording medium, of which recording layer is formed with a phase change layer, so as to record or reproduce information, comprising:

a light source;

a dividing mechanism for dividing laser light, which is emitted from said light source and polarized in the same direction, into two light waves, said dividing mechanism including a laser power ratio controller that controls a power ratio at which the laser light is divided, and the two light waves respectively assuming the first power that causes the temperature of said recording layer to be equal to or higher than the melting point; and the power that causes said recording layer to be crystallized;

a photo-detector for detecting light waves reflected from said information recording medium to which the two light waves are irradiated; and

a signal adding mechanism for converting the reflected light waves of the two light waves, which are detected by said

photo-detector, into signals, and adding up the signals.

9. An information recording/reproducing apparatus according to Claim 8, wherein for reproduction, the power ratio
- 5 is set to 1:1.